Small Molecules

EX527

Epigenetic modifier; Inhibits SIRT1 histone deacetylase

Catalog #		
	73652	1 mg
	73654	10 mg

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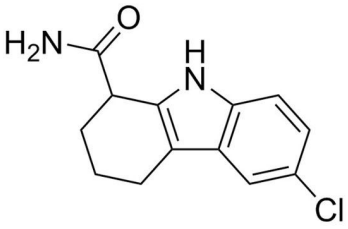
Product Description

EX527 is a cell-permeable, selective inhibitor of mammalian sirtuin 1 (SIRT1; IC_{50} = 98 nM) over SIRT2 and SIRT3 and has no effect on other histone deacetylases (HDACs; Nayagam et al.). SIRT1 is a nicotinamide adenine dinucleotide (NAD)-dependent deacetylase with roles in energy metabolism and inflammation. Studies have shown that EX527 inhibits sirtuins by forming a trimeric sirtuin complex with an NAD+-derived coproduct (Gertz M et al.).

Molecular Name:	EX527
Alternative Names:	Selisistat
CAS Number:	49843-98-3
Chemical Formula:	$C_{13}H_{13}ClN_2O$
Molecular Weight:	248.7 g/mol
Purity:	≥ 98%
Chemical Name:	6-chloro-2,3,4,9-tetrahydro-1H-carbazole-1-carboxamide
Structure:	

Properties

Physical Appearance:	A crystalline solid
Storage:	Product stable at -20°C as supplied. Protect product from prolonged exposure to light. For long-term storage store with a desiccant. For product expiry date, please contact techsupport@stemcell.com.
Solubility:	· DMSO ≤ 80 mM · Ethanol ≤ 20 mM For example, to prepare a 10 mM stock solution in DMSO, resuspend 1 mg in 402 µL of DMSO. Prepare stock solution fresh before use. Information regarding stability of small molecules in solution has rarely been reported, however, as a general guide we recommend storage in DMSO at -20°C. Aliquot into working volumes to avoid repeated freeze-thaw cycles. The effect of storage of stock solution on compound performance should be tested for each application. Compound has low solubility in aqueous media. For use as a cell culture supplement, stock solution should be diluted into culture medium immediately before use. Avoid final DMSO concentration above 0.1% due to potential cell toxicity.

Published Applications

DIFFERENTIATION
· Increases the production of oligodendrocytes from differentiating neural stem cells and neural progenitor cells in vitro (Rafalski et al.).
IMMUNOLOGY
· Restores the microvascular response during the hypoinflammatory phase in a mouse model of sepsis, and enhances the systemic innate immune response (Vachharajani et al.).
DISEASE MODELING
· Delays cyst growth in kidneys of PKD1 knockout mouse models (Zhou et al.).

References

Gertz M et al. (2013) Ex-527 inhibits Sirtuins by exploiting their unique NAD+-dependent deacetylation mechanism. Proc Natl Acad Sci U S A 110(30): E2772–81.
Nayagam VM et al. (2006) SIRT1 modulating compounds from high-throughput screening as anti-inflammatory and insulin-sensitizing agents. J Biomol Screen 11(8): 959–67.
Rafalski VA et al. (2013) Expansion of oligodendrocyte progenitor cells following SIRT1 inactivation in the adult brain. Nat Cell Biol 15(6): 614–24.
Vachharajani VT et al. (2014) SIRT1 inhibition during the hypoinflammatory phenotype of sepsis enhances immunity and improves outcome. J Leukoc Biol 96(5): 785–96.
Zhou X et al. (2013) Sirtuin 1 inhibition delays cyst formation in autosomal-dominant polycystic kidney disease. J Clin Invest 123(7): 3084–98.

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This product is hazardous. Please refer to the Safety Data Sheet (SDS).